WM-FX163

SERVICE MANUAL

US Model
AEP Model
E Model

Model WM-FX163 is almost same as WM-FX123 model.
This manual contains only the points which differ from WM-FX123 model.
However, accessories and packing materials are all listed.
For the informations not contained in this manual, please refer to WM-FX123 service manual (9-960-557-□□) previously issued.

1. DIFFERENCE PARTS LIST

Page	WM-FX123				WM-FX163			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1	X-3371-824-1	CABINET (REAR) SUB ASSY (BLACK) (MADE IN CHINA)	(US, CND, E, EA)	1	X-3374-834-1	CABINET (REAR) SUB ASSY (BLACK)	(AEP, FR, IT)
	1	X-3371-825-1	CABINET (REAR) SUB ASSY (BLUE)	(US, CND, AEP, UK, IT, EE, E, EA)	1	X-3374-984-1	CABINET (REAR) SUB ASSY (BLACK)	(US, EE, E)
	1	X-3371-832-1	CABINET (REAR) SUB ASSY (RED)	(US, CND, AEP, UK, IT, EE, E, EA)	1	X-3374-987-1	CABINET (REAR) SUB ASSY (OTHERS)	(US, E)
	1	X-3371-833-1	CABINET (REAR) SUB ASSY (RED)	(US, CND, AEP, UK, IT, EE, E, EA)				
	1	X-3371-834-1	CABINET (REAR) SUB ASSY (BLACK)	(AEP, UK, IT)				
	1	X-3371-838-1	CABINET (REAR) SUB ASSY (BLACK)	(EE)				
	3	3-935-477-01	LID, BATT (BLACK)		3	3-937-355-01	LID, BATT (BLACK)	
	3	3-935-477-31	LID, BATT (GREEN)		3	3-937-355-41	LID, BATT (OTHERS)	
	3	3-935-477-51	LID, BATT (BLUE)					
16	3	3-935-477-61	LID, BATT (RED)					
	8	———			8	A-3021-014-A	MAIN BOARD, COMPLETE (FR)	
	11	X-3371-790-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(US, CND)	11	X-3374-836-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(AEP, FR)
	11	X-3371-791-1	HOLDER (CF-MB) SUB ASSY (BLUE)	(US, CND)	11	X-3374-837-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(IT)
	11	X-3371-792-1	HOLDER (CF-MB) SUB ASSY (GREEN)	(US, CND)	11	X-3374-838-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(EE)
	11	X-3371-793-1	HOLDER (CF-MB) SUB ASSY (RED)	(US, CND)	11	X-3374-983-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(US)
	11	X-3371-794-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(AEP, UK, E)	11	X-3374-985-1	HOLDER (CF-MB) SUB ASSY (BLUE)	(US, E)
	11	X-3371-795-1	HOLDER (CF-MB) SUB ASSY (BLUE)	(AEP, UK, E)	11	X-3374-986-1	HOLDER (CF-MB) SUB ASSY (RED)	(US, E)
	11	X-3371-802-1	HOLDER (CF-MB) SUB ASSY (GREEN)	(AEP, UK, E)				

- Abbreviation
  CND : Canadian model
  IT : Italian model
  EE : East European model
  EA : Saudi Arabia model
  FR : French model

RADIO CASSETTE PLAYER

MICROFILM

SONY®

Page	WM-FX123				WM-FX163			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	11	X-3371-803-1	HOLDER (CF-MB) SUB ASSY (RED)	(AEP, UK, E)				
	11	X-3371-804-1	HOLDER (CF-MB) SUB ASSY (BLUE)	(IT, EA)				
	11	X-3371-805-1	HOLDER (CF-MB) SUB ASSY (BLUE)	(IT, EA)				
	11	X-3371-806-1	HOLDER (CF-MB) SUB ASSY (GREEN)	(IT, EA)				
	11	X-3371-807-1	HOLDER (CF-MB) SUB ASSY (RED)	(IT, EA)				
	11	X-3371-820-1	HOLDER (CF-MB) SUB ASSY (BLACK)	(EE)				
	11	X-3371-821-1	HOLDER (CF-MB) SUB ASSY (BLUE) (EE)					
	11	X-3371-822-1	HOLDER (CF-MB) SUB ASSY (GREEN)	(EE)				
	11	X-3371-823-1	HOLDER (CF-MB) SUB ASSY (RED) (EE)					
16	12	3-933-649-01	KNOB (M/B)		12	3-939-091-01	KNOB (M/B) (BLACK)	
					12	3-939-091-11	KNOB (M/B) (OTHERS)	
	15	3-933-685-01	CABINET (FRONT) (CF-O) (BLACK)	(AEP, UK, E, IT, EE, EA)	15	3-937-353-01	CABINET (FRONT) (CF-O) (BLACK)	(US,E)
	15	3-933-685-11	CABINET (FRONT) (CF-O) (BLUE)	(AEP, UK, E, IT, EE, EA)	15	3-937-353-81	CABINET (FRONT) (CF-O) (OTHERS)	(US,E)
	15	3-933-685-21	CABINET (FRONT) (CF-O) (GREEN)	(AEP, UK, E, IT, EE, EA)	15	3-937-353-41	CABINET (FRONT) (CF-O) (BLACK)	(AEP, FR, IT, EE)
	15	3-933-685-31	CABINET (FRONT) (CF-O) (RED)	(AEP, UK, E, IT, EE, EA)				
	15	3-933-685-51	CABINET (FRONT) (CF-O) (BLACK)	(US, CND)				
	15	3-933-685-61	CABINET (FRONT) (CF-O) (BLUE)	(US, CND)				
	15	3-933-685-71	CABINET (FRONT) (CF-O) (GREEN)	(US, CND)				
	15	3-933-685-81	CABINET (FRONT) (CF-O) (RED) (US, CND)					

- Abbreviation
  CND : Canadian model
  IT : Italian model
  EE : East European model
  EA : Saudi Arabia model
  FR : French model

2. ACCESSORIES & PACKING MATERIALS

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Abbreviation
  IT : Italian model
  EE : East European model
  FR : French model

Ref. No.	Part No.	Description	Remark
	1-505-521-11	HEADPHONE (MD-023)	
	3-861-487-11	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-859-487-21	MANUAL, INSTRUCTION (FRENCH) (FR)	
	3-861-487-31	MANUAL, INSTRUCTION (ENGLISH, DANISH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE) (AEP, IT, EE)	
	3-859-487-41	MANUAL, INSTRUCTION (ENGLISH, DANISH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE) (AEP)	
	3-859-487-61	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (E)	
*	3-008-925-01	CUSHION (UPPER) (US, AEP, FR, IT)	
*	3-008-926-01	CUSHION (LOWER) (US, AEP, FR, IT)	
	X-3372-629-2	CLIP, BELT ASSY	

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WM-FX123

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

Model Name Using Similar Mechanism	WM-FX121
Tape Transport Mechanism Type	MF-WMFX103-48CY

SPECIFICATIONS

Radio Frequency

FM : 65 – 107.9 MHz (East European Model)
: 87.5 – 108 MHz (Italy, Saudi Arabia Model)
: 87.6 – 108 MHz (US, Canadian Model)
: 87.6 – 107.9 MHz (AEP, UK, E Model)
AM : 526.5 – 1,606.5 kHz (Italy, Saudi Arabia Model)
: 530 – 1,710 kHz (US, Canadian Model)
: 531 – 1,602 kHz (AEP, UK, E, East Europian Model)

Power Requirements

3V DC Batteries AA (R6) x 2
External DC 3 V power sources

Battery Life

(approximate hours when using the batteries specified below)

Battery	Playback	Radio
Sony Alkaline LR6 (SG)	13 hours	30 hours
Sony R6P (SR)	4 hours	15 hours

Dimensions

118.8 x 89.5 x 34.1 mm (4 3/4 x 3 5/8 x 1 3/8 in.)

Mass

200g (7.1 oz) incl. batteries

Supplied Accessories

• Stereo headphones (1)
• Belt clip (1)

Optional Accessories

• AC power adaptor AC-E30HG
• Car battery cord DCC-E130L, DCC-E230

Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information.

Design and specifications are subject to change without notice.

Using External Power Sources

You can connect the following external power sources through the DC IN 3V jack located on the bottom.
(When you plug a cord into the DC IN 3 V jack, the internal batteries are automatically bypassed.)

• House current using an AC-E30HG AC power adaptor
• 12 V car battery using a DCC-E130L/E230 car battery cord

Note:

Use only the recommended AC-E30HG AC power adaptor (not supplied). Do not use any other AC power adaptor.

Polarity of the plug

RADIO CASSETTE PLAYER

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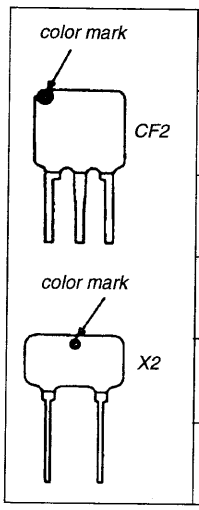
HOW TO CHANGED THE CERAMIC FILTERS

This model is used two ceramic filters of CF2, X2. You must used same type of color marked ceramic filters in order to meet same specifications.

Therefore, the ceramic filter must changed two pieces together since it's supply two pieces in one package as a spare parts.



color mark	Center Frequency
red	10.70MHz
blue	10.67MHz
orange	10.73MHz
black	10.64MHz
white	10.67MHz

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C dur ing repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

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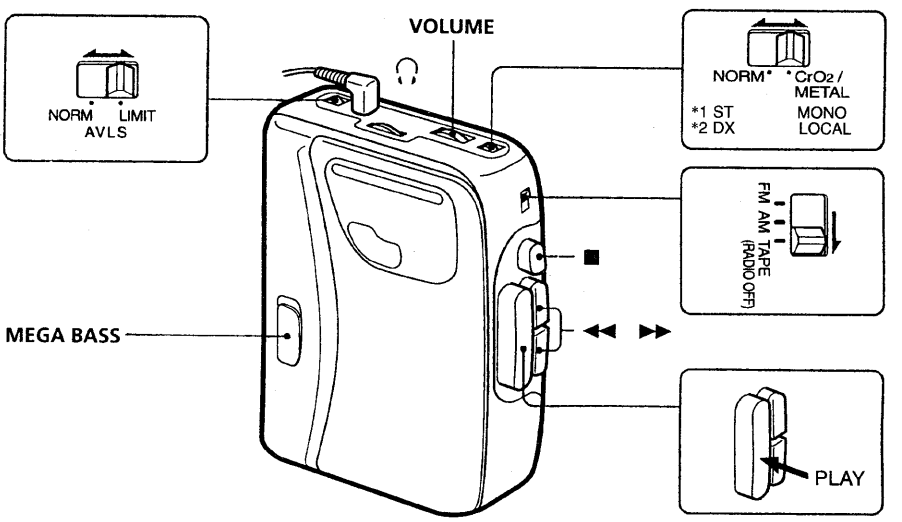
SECTION 1 GENERAL

This section is extracted from instruction manual.

◀◀ ▶▶
Wind rapidly.



■
Stop.

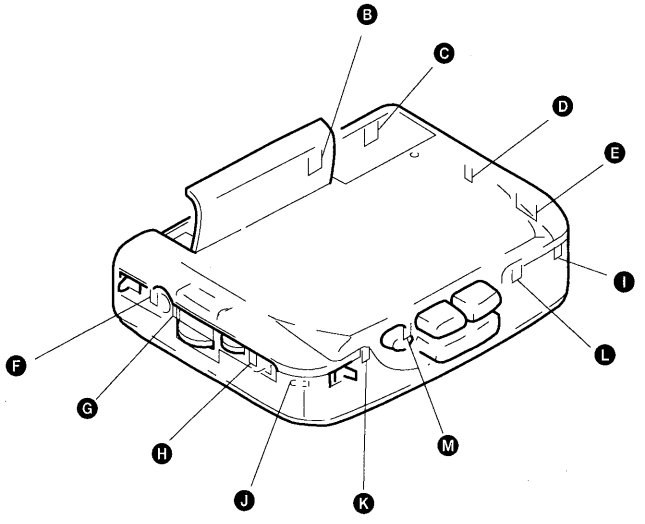
MEGA BASS
For deep and powerful sound.

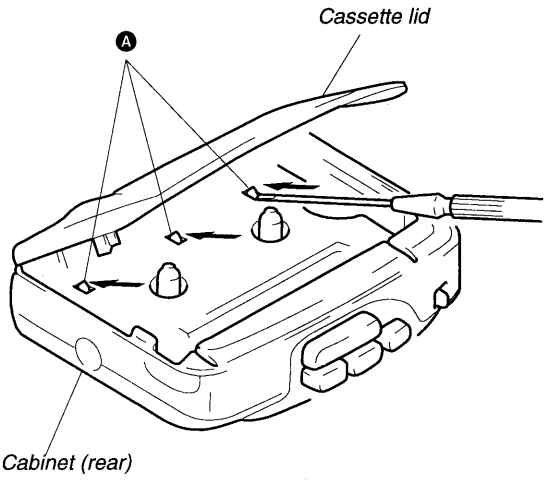
Note:
*1 : Except US, Canadian model.
*2 : US, Canadian model.

SECTION 2
DISASSEMBLY

Note: • Follow the disassembly procedure in the numerical order given.
• Please take enough care not to break the claws when installing due to a lot of claws on this set.

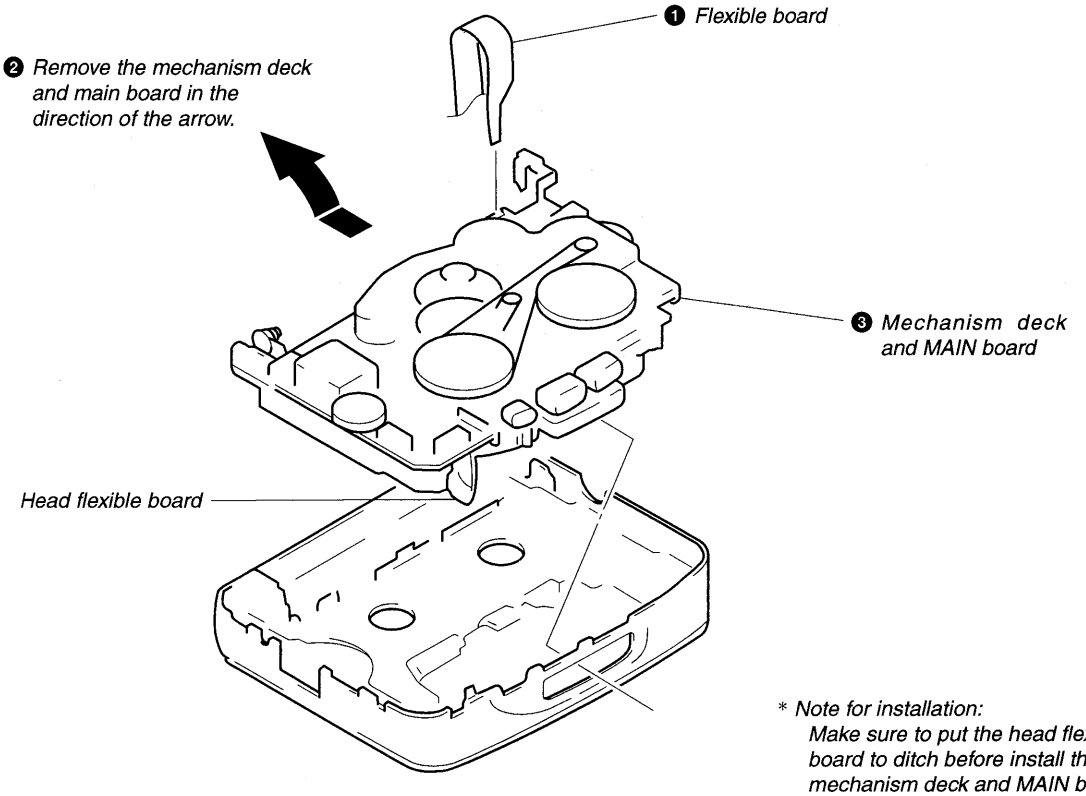
2-1. CABINET (REAR)





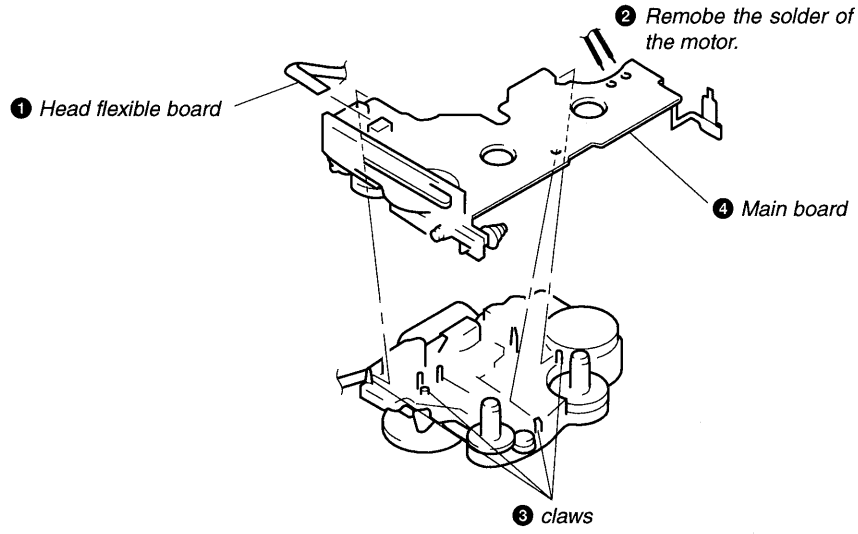
❶ *Insert the precision screw driver (1.4 mm flat-blade) in to the slit at claw Ⓐ and release the claw.*
❷ *Remove the cabinet (rear). (Release all claw Ⓑ to Ⓜ in alphabetical order.)*

2-2. MECHANISM DECK AND MAIN BOARD

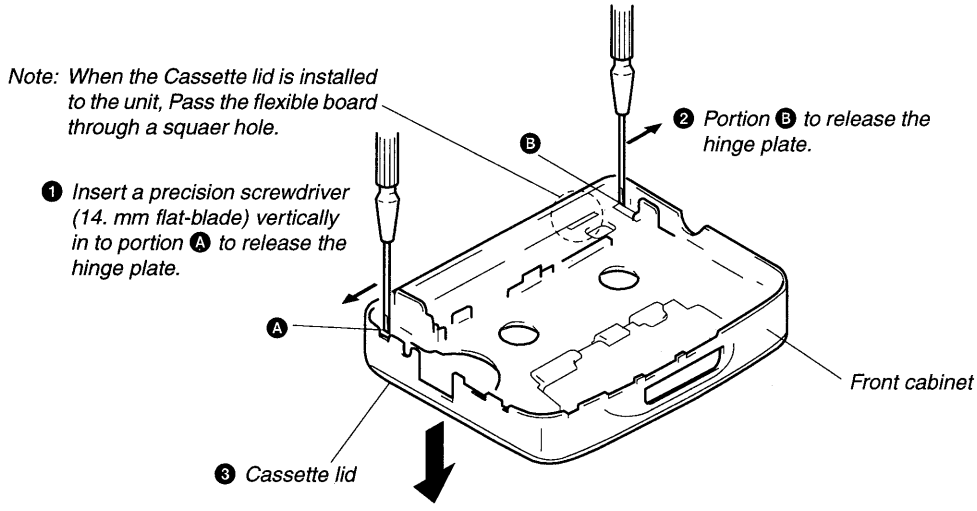

❶ Flexible board
❷ Remove the mechanism deck and main board in the direction of the arrow.
❸ Mechanism deck and MAIN board
Head flexible board

* *Note for installation:*
Make sure to put the head flexible board to ditch before install the mechanism deck and MAIN board.

2-3. MAIN BOARD



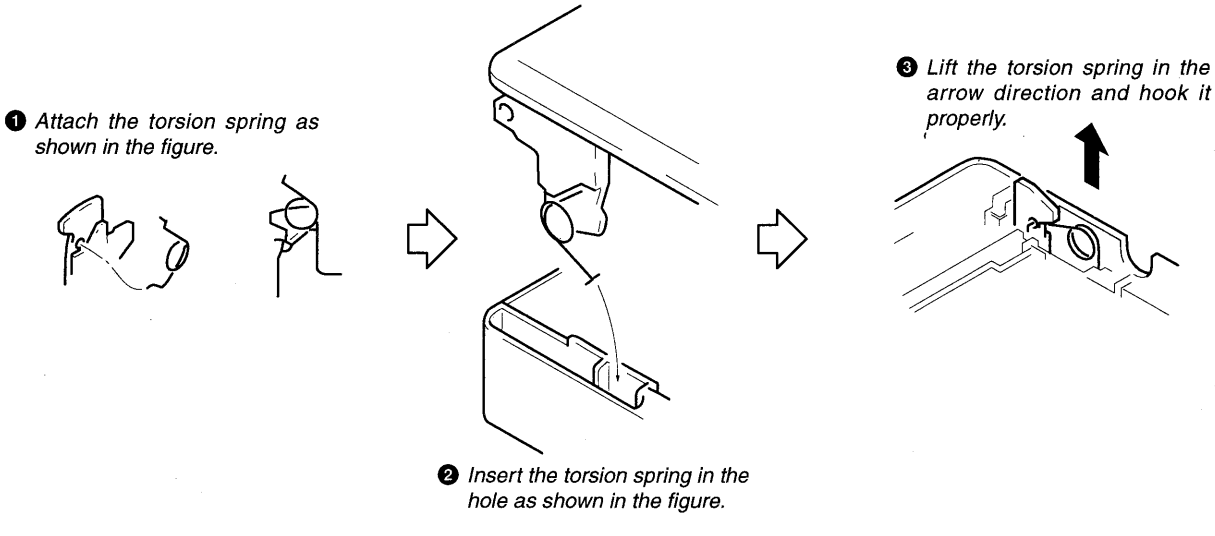
2-4. CASSETTE LID


Note: When the Cassette lid is installed to the unit, Pass the flexible board through a squaer hole.
❷ Portion Ⓑ to release the hinge plate.
Ⓑ
❶ Insert a precision screwdriver (14. mm flat-blade) vertically in to portion Ⓐ to release the hinge plate.
Ⓐ
Front cabinet
❸ Cassette lid

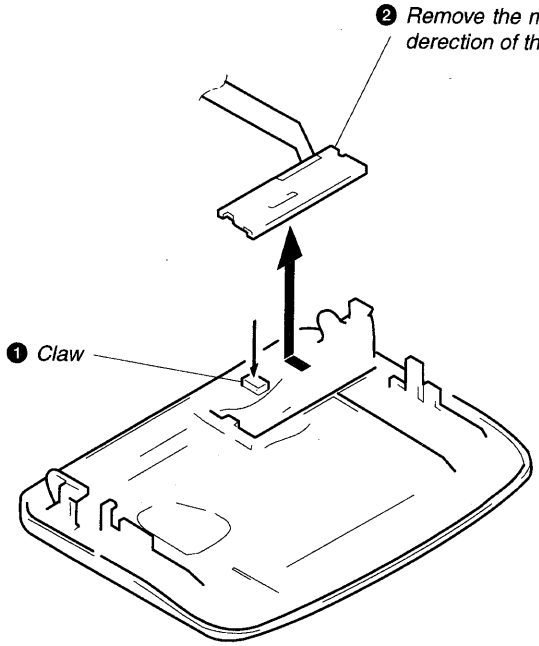
NOTE FOR INSTALLATION

The torsion spring will be removed together with the cassette lid that perform the following for installation.

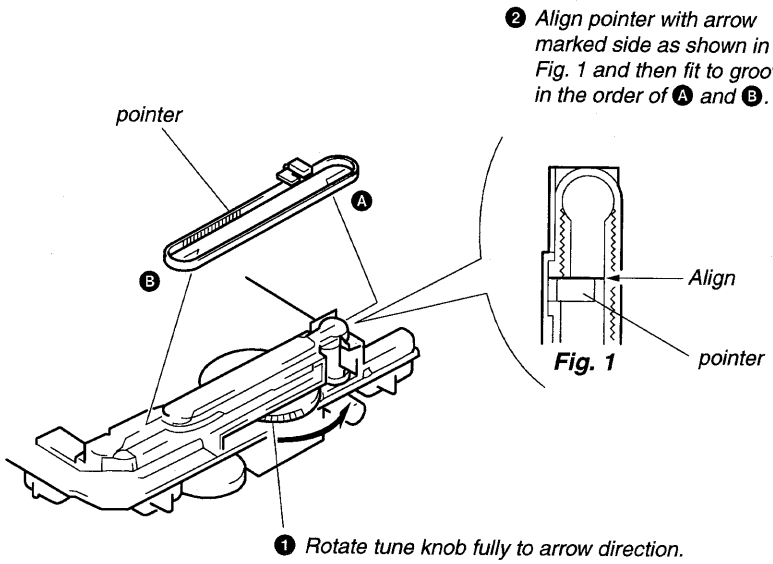
• TORSION SPRING


❶ Attach the torsion spring as shown in the figure.
❸ Lift the torsion spring in the arrow direction and hook it properly.
❷ Insert the torsion spring in the hole as shown in the figure.

2-5. MEGA BASS UNIT



2-6. DIAL POINTER SETTING


❷ Align pointer with arrow marked side as shown in Fig. 1 and then fit to groove in the order of Ⓐ and Ⓑ.
pointer
Ⓐ
Ⓑ
Align
pointer
Fig. 1
❶ Rotate tune knob fully to arrow direction.

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

Precaution

1. Clean the follwing parts with a denatured-alcohol-moistened swab :
   playback head　　pinch roller
   capstan　　rubber belts
2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage (2.5 V) unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	20-42 g-cm (0.28-0.58 oz-inch)
FWD Back Tension		less than 2 g-cm (less than 0.03 oz-inch)
FF, REW	CQ-201B	more than 60 g-cm (more than 0.83 oz-inch)

Tape Pulling Force Measurement

Mode	Torque meter	Meter reading
FWD	CQ-403A	more than 40g (more than 1.4 oz)

3-2. ELECTRICAL ADJUSTMENTS

Precaution

- Supplied voltage : 2.5V
- Switch and control position
  TAPE switch : NORM
  MEGA BASS switch : OFF
  VOLUME control : maximum
  AVLS switch : NORM

TAPE SECTION

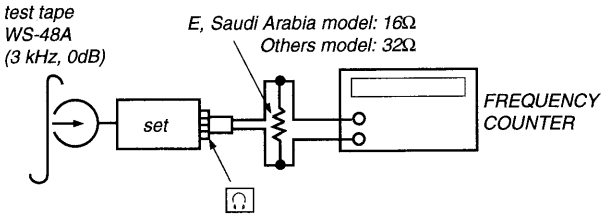
- FUNCTION switch : TAPE

Test tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	Tape Speed Adjustment

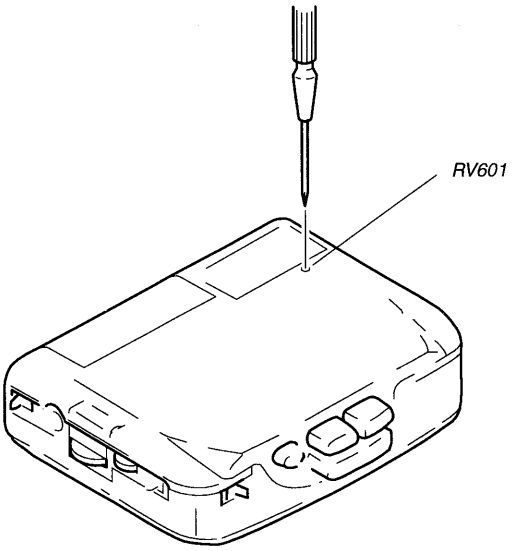
Tape speed adjustment
Tape selection switch : NORM

Procedure:



Playback WS-48A (tape center portion) in reverse mode.
Adjust the RV601 so that the frequency counter reads 3,000Hz ± 15Hz.
Frequency difference between the begining and the end of the tape should be within ± 1.5%.

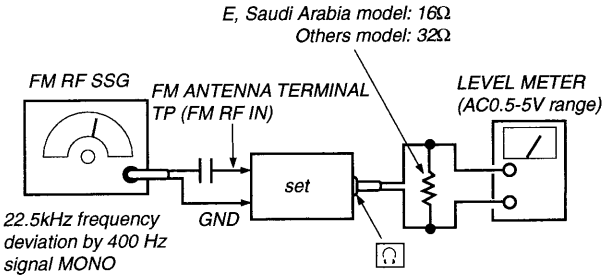
Adjustment Location:



RADIO SECTION

• FUNCTION switch: FM/AM

FM section



Repeat the procedure in each adjustment several times since L (3, 2) affects CT (3, 2) and CT (3, 2) affects L (3, 2). Both the frequency coverage and tracking adjustments should end with the final adjustment of the trimmer capacitors.

FM Frequency Coverage Adjustment

Pointer position	SG frequency	Adjustment part	Reading on LEVEL METER
f minimum	86 MHz ((64MHz)) [87.35MHz]	L3	maximum
f maximum	109.5MHz ((109.5MHz)) [108.25MHz]	CT3	

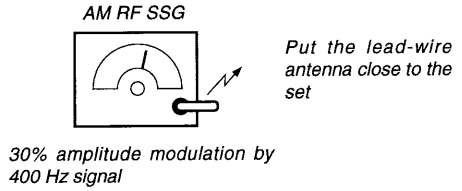
(( )) : East European model, [ ] : Italian, Saudi Arabia model

FM Tracking Adjustment

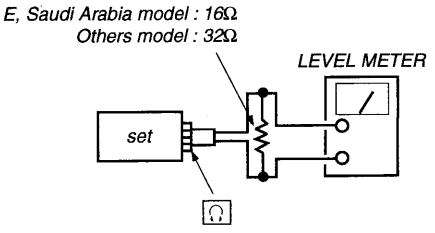
SG and set frequency	Adjustment part	Reading on LEVEL METER
86MHz ((64MHz)) [87.35MHz]	L2	maximum
109.5MHz ((109.5MHz)) [108.25MHz]	CT2	

(( )) : East European model, [ ] : Italian, Saudi Arabia model

AM section



Repeat the procedure in each adjustment several times since L (4, 1) affects CT (4, 1) and CT (4, 1) affects L (4, 1). Both the frequency coverage and tracking adjustments should end with the final adjustment of the trimmer capacitors.



AM Frequency Coverage Adjustment

Pointer position	SG frequency	Adjustment part	Reading on LEVEL METER
f minimum	505kHz ((515kHz)) [516.5kHz]	L4	maximum
f maximum	1,750kHz ((1670kHz)) [1,631.5kHz]	CT4	

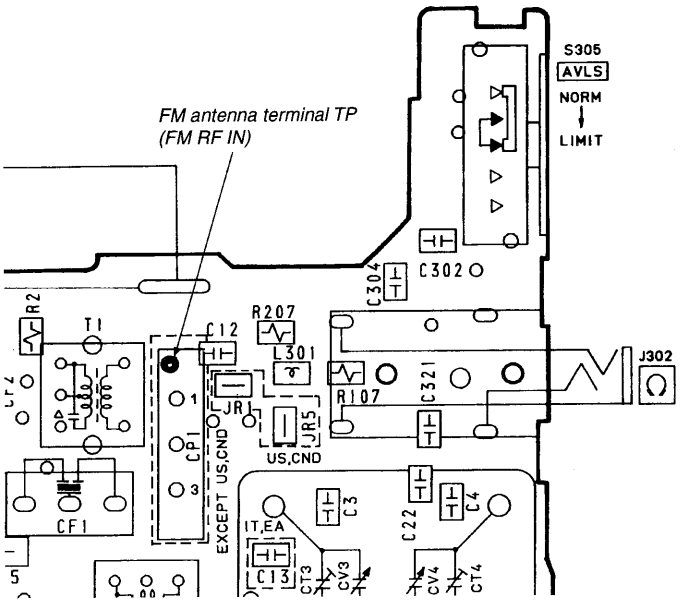
(( )) : East European model
[ ] : Italian, Saudi Arabia model

AM Tracking Adjustment

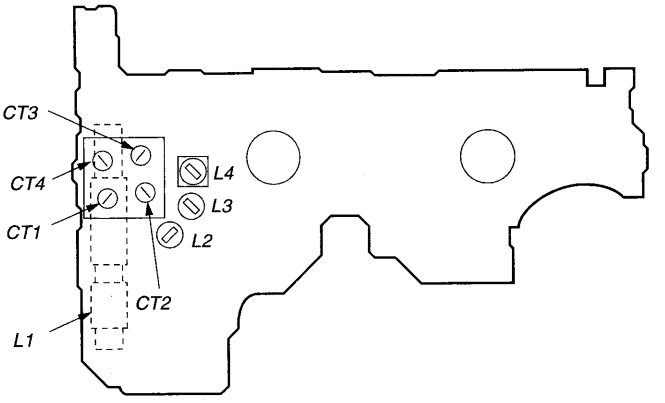
SG and set frequency	Adjustment part	Reading on LEVEL METER
620kHz ((800kHz))	L1	maximum
1,400kHz ((1,300kHz))	CT1	

(( )) : Italian, East European, Saudi Arabia model

Adjustment Location: main board



– Component Side –

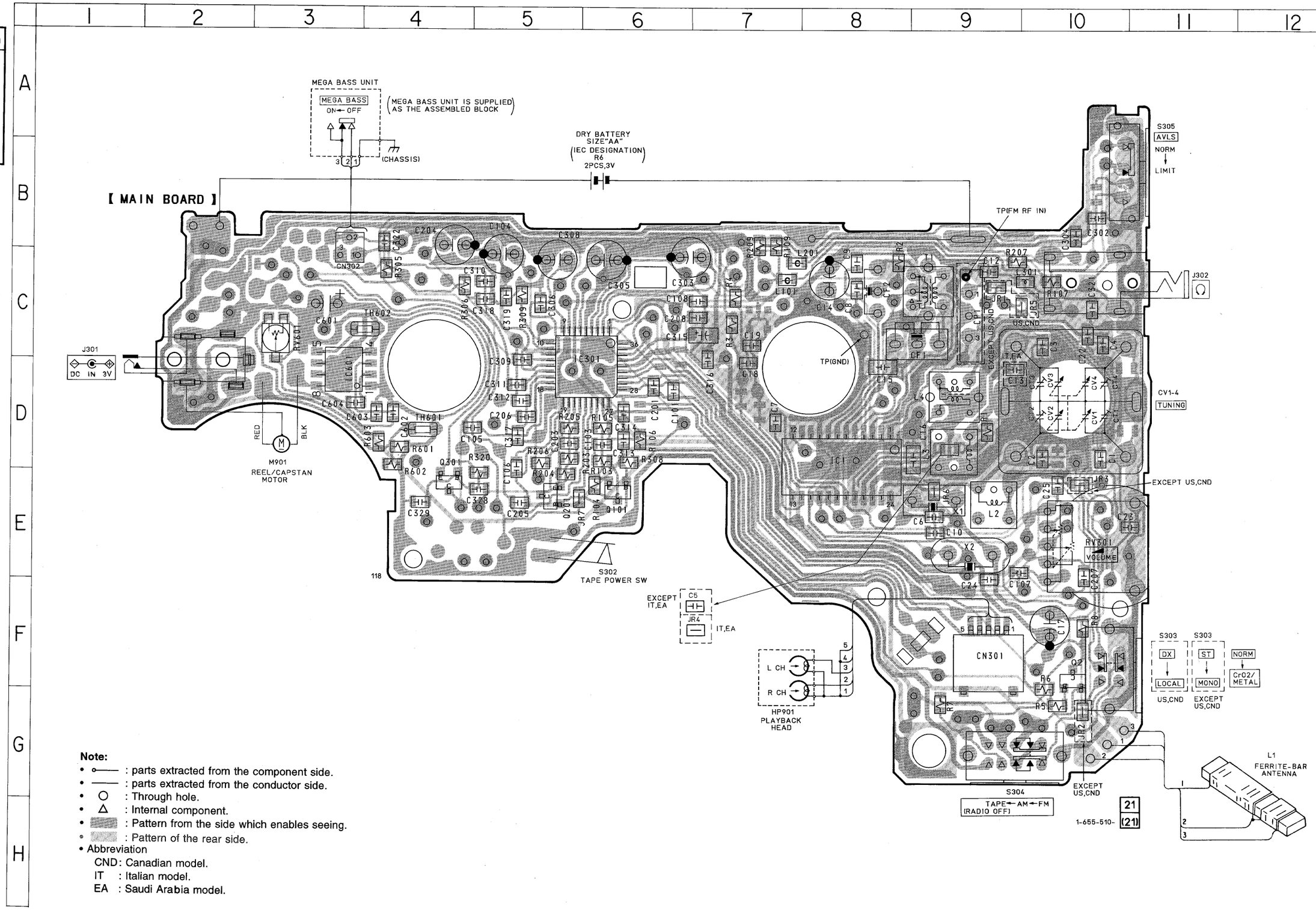


SECTION 4
DIAGRTAMS

4-1. PRINTED WIRING BOARD

• Semiconductor Location

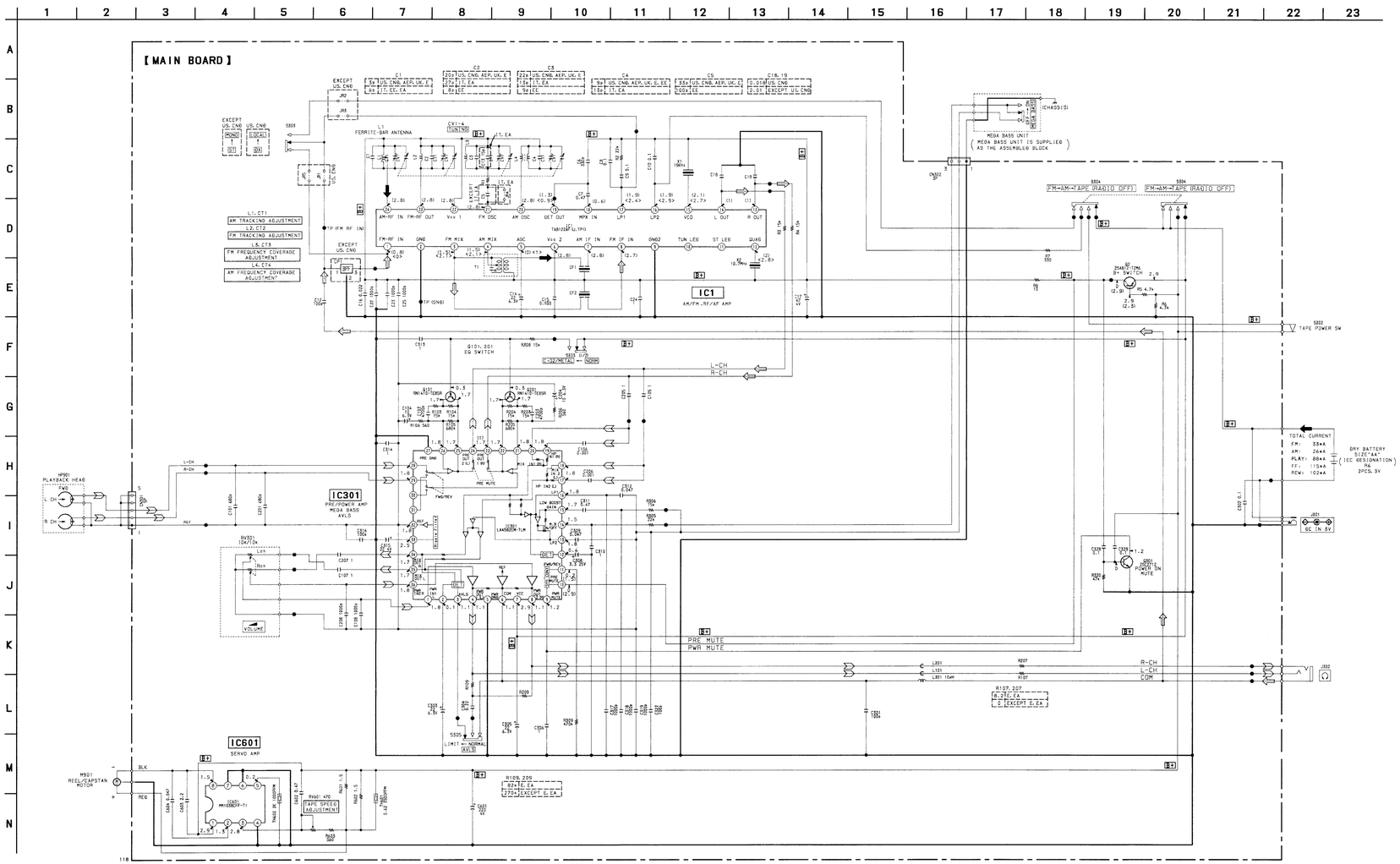
Ref. No.	Location
IC1	D-8
IC301	D-6
IC601	D-3
Q2	F-10
Q101	E-6
Q201	E-5
Q301	E-4



Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ○ : Through hole.
- △ : Internal component.
- ▬ : Pattern from the side which enables seeing.
- ▬ : Pattern of the rear side.
- Abbreviation
  - CND : Canadian model.
  - IT : Italian model.
  - EA : Saudi Arabia model.

4-2. SCHEMATIC DIAGRAM

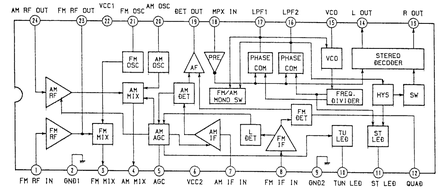


NOTE

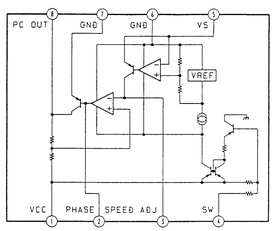
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- : panel designation.
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 3 V and fed with regulated dc power supply from external power voltage jack.
- Voltages are dc with respect to ground under no-signal (deturned) conditions. no mark: PB ( ) : FM < > : AM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path. : FM : AM : PB
- Abbreviation CND: Canadian model. IT : Italian model. EE : East European model. EA : Saudi Arabia model.

• IC Block Diagrams

IC1 TA8122AF (J, TP1)



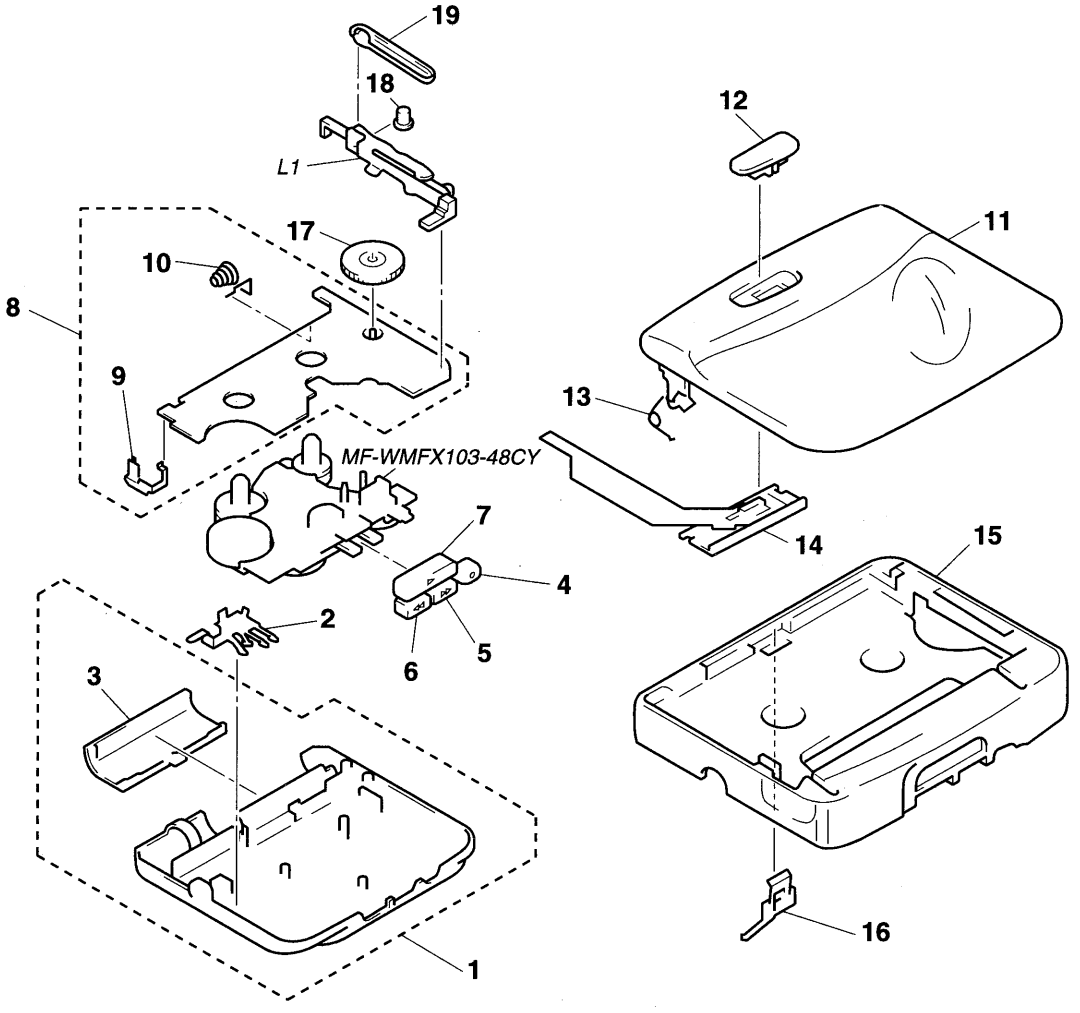
IC601 MM1038CFF



SECTION 5
EXPLODED VIEWS

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB. BALANCE (WHITE)
  ↑
  Parts color
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND: Canadian model
  IT : Italian model
  EE : East European model
  EA : Saudi Arabia model

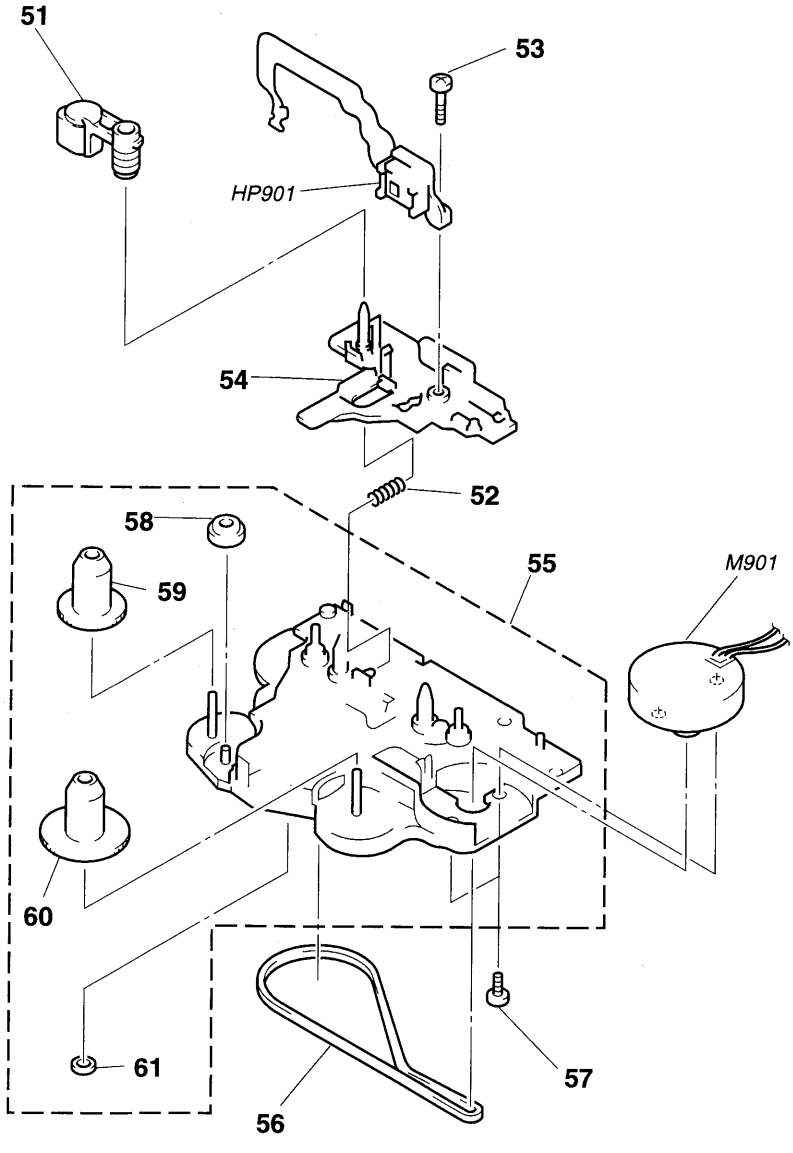
5-1. CABINET AND BOARD SECTION



REVISED

Ref. No.	Part No.	Description	Remark
1	X-3371-824-1	CABINET (REAR) SUB ASSY(BLACK) (MADE IN CHINA) (US,CND,E,EA)	
1	X-3371-825-1	CABINET (REAR) SUB ASSY (BLUE) (US,CND,AEP,UK,IT,EE,E,EA)	
1	X-3371-832-1	CABINET (REAR) SUB ASSY (GREEN) (US,CND,AEP,UK,IT,EE,E,EA)	
1	X-3371-833-1	CABINET (REAR) SUB ASSY (RED) (US,CND,AEP,UK,IT,EE,E,EA)	
1	X-3371-834-1	CABINET (REAR) SUB ASSY (BLACK)(AEP,UK,IT)	
1	X-3371-838-1	CABINET (REAR) SUB ASSY (BLACK)(E,EE)	
2	3-910-896-01	GROUND, MOTOR	
3	3-935-477-01	LID, BATT (BLACK)	
3	3-935-477-31	LID, BATT (GREEN)	
3	3-935-477-51	LID, BATT (BLUE)	
3	3-935-477-61	LID, BATT (RED)	
4	3-933-647-01	BUTTON (STOP)	
5	3-933-644-01	BUTTON (FF)	
6	3-933-643-01	BUTTON (REW)	
7	3-933-646-01	BUTTON (PLAY)	
8	A-3016-812-A	MAIN BOARD, COMPLETE (US,CND)	
8	A-3016-813-A	MAIN BOARD, COMPLETE (AEP,UK)	
8	A-3016-814-A	MAIN BOARD, COMPLETE (IT)	
8	A-3016-815-A	MAIN BOARD, COMPLETE (EE)	
8	A-3016-816-A	MAIN BOARD, COMPLETE (E)	
8	A-3016-817-A	MAIN BOARD, COMPLETE (EA)	
9	3-933-642-01	TERMINAL (+), BATTERY	
10	3-910-895-01	TERMINAL (-), BATTERY	
11	X-3371-790-1	HOLDER (CF-MB) SUB ASSY (BLACK)(US,CND)	
11	X-3371-791-1	HOLDER (CF-MB) SUB ASSY (BLUE)(US,CND)	
11	X-3371-792-1	HOLDER (CF-MB) SUB ASSY (GREEN)(US,CND)	
11	X-3371-793-1	HOLDER (CF-MB) SUB ASSY (RED)(US,CND)	
11	X-3371-794-1	HOLDER (CF-MB) SUB ASSY (BLACK)(AEP,UK,E)	
11	X-3371-795-1	HOLDER (CF-MB) SUB ASSY (BLUE)(AEP,UK,E)	
11	X-3371-802-1	HOLDER (CF-MB) SUB ASSY (GREEN) (AEP,UK,E)	
11	X-3371-803-1	HOLDER (CF-MB) SUB ASSY (RED)(AEP,UK,E)	
11	X-3371-804-1	HOLDER (CF-MB) SUB ASSY (BLACK)(IT,EA)	
11	X-3371-805-1	HOLDER (CF-MB) SUB ASSY (BLUE)(IT,EA)	
11	X-3371-806-1	HOLDER (CF-MB) SUB ASSY (GREEN)(IT,EA)	
11	X-3371-807-1	HOLDER (CF-MB) SUB ASSY (RED)(IT,EA)	
11	X-3371-820-1	HOLDER (CF-MB) SUB ASSY (BLACK)(EE)	
11	X-3371-821-1	HOLDER (CF-MB) SUB ASSY (BLUE)(EE)	
11	X-3371-822-1	HOLDER (CF-MB) SUB ASSY (GREEN)(EE)	
11	X-3371-823-1	HOLDER (CF-MB) SUB ASSY (RED)(EE)	
12	3-933-649-01	KNOB (M/B)	
13	3-922-628-01	SPRING, TORSION	
14	1-467-600-21	MEGA BASS UNIT (SW)	
15	3-933-685-01	CABINET (FRONT)(CF-O)(BLACK) (AEP,UK,E,IT,EE,EA)	
15	3-933-685-11	CABINET (FRONT)(CF-O)(BLUE)(AEP,UK,E,IT,EE,EA)	
15	3-933-685-21	CABINET (FRONT)(CF-O)(GREEN) (AEP,UK,E,IT,EE,EA)	
15	3-933-685-31	CABINET (FRONT)(CF-O)(RED)(AEP,UK,E,IT,EE,EA)	
15	3-933-685-51	CABINET (FRONT)(CF-O)(BLACK)(US,CND)	
15	3-933-685-61	CABINET (FRONT)(CF-O)(BLUE)(US,CND)	
15	3-933-685-71	CABINET (FRONT)(CF-O)(GREEN)(US,CND)	
15	3-933-685-81	CABINET (FRONT)(CF-O)(RED)(US,CND)	
16	3-364-675-01	SPRING (CASSETTE)	
17	3-910-902-01	KNOB (TUNE)	
18	3-933-675-01	GEAR (TUNE)	
19	3-933-678-01	POINTER	
L1	X-3371-847-1	FERRITE BAR ANTENNA SUB ASSY	

5-2. MECHANISM SECTION (MF-WMFX103-48CY)



Ref. No.	Part No.	Description	Remark
51	X-3367-902-1	ARM (N) ASSY, PINCH	
52	3-364-328-01	SPRING, COMPRESSION	
53	3-910-635-01	SCREW	
54	3-910-647-01	LEVER (PR/O), PLAY	
55	X-3368-729-1	CHASSIS ASSY	
56	3-354-868-11	BELT	
57	3-352-758-21	SCREW (M1.7), TOOTHED LOCK	

Ref. No.	Part No.	Description	Remark
58	3-909-727-01	GEAR (REVERSE)	
59	3-364-320-01	GEAR (S REEL)	
60	3-910-640-01	GEAR (T REEL)	
61	3-321-483-11	RING, RETAINING	
HP901	1-500-115-11	HEAD, MAGNETIC (PLAYBACK)	
M901	1-698-353-11	MOTOR, DC (REEL CAPSTAN)	

MAIN

SECTION 6
ELECTRICAL PARTS LIST

Note:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB..., uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  CND: Canadian model
  IT : Italian model
  EE : East European model
  EA : Saudi Arabia model

Ref. No.	Part No.	Description			Remark
	A-3016-812-A	MAIN BOARD, COMPLETE (US,CND)			
		**********			
	A-3016-813-A	MAIN BOARD, COMPLETE (AEP,UK)			
		**********			
	A-3016-814-A	MAIN BOARD, COMPLETE (IT)			
		**********			
	A-3016-815-A	MAIN BOARD, COMPLETE (EE)			
		**********			
	A-3016-816-A	MAIN BOARD, COMPLETE (E)			
		**********			
	A-3016-817-A	MAIN BOARD, COMPLETE (EA)			
		**********			
	3-910-895-01	TERMINAL (-), BATTERY			
	3-933-642-01	TERMINAL (+), BATTERY			
		< CAPACITOR >			
C1	1-163-086-00	CERAMIC CHIP	3PF	50V	(US,CND,AEP,UK,E)
C1	1-163-089-00	CERAMIC CHIP	6PF	50V	(IT,EE,EA)
C2	1-163-091-00	CERAMIC CHIP	8PF	50V	(EE)
C2	1-163-100-00	CERAMIC CHIP	20PF	5% 50V	(US,CND,AEP,UK,E)
C2	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	(IT,EA)
C3	1-163-092-00	CERAMIC CHIP	9PF	0.25PF 50V	(EE)
C3	1-163-096-00	CERAMIC CHIP	13PF	5% 50V	(IT,EA)
C3	1-163-101-00	CERAMIC CHIP	22PF	5% 50V	(US,CND,AEP,UK,E)
C4	1-163-092-00	CERAMIC CHIP	9PF	0.25PF 50V	(US,CND,AEP,UK,E,EE)
C4	1-163-096-00	CERAMIC CHIP	13PF	5% 50V	(IT,EA)
C5	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	(EE)
C5	1-163-239-11	CERAMIC CHIP	33PF	5% 50V	(US,CND,AEP,UK,E)
C6	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C7	1-164-005-11	CERAMIC CHIP	0.47uF	25V	

Ref. No.	Part No.	Description			Remark
C8	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C9	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C10	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C12	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C13	1-163-097-00	CERAMIC CHIP	15PF	5%	50V (IT,EA)
C14	1-126-153-11	ELECT	22uF	20%	6.3V
C15	1-163-078-11	CERAMIC CHIP	0.033uF	10%	25V
C16	1-163-063-91	CERAMIC CHIP	0.022uF	10%	50V
C17	1-126-154-11	ELECT	47uF	20%	6.3V
C18	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V (US,CND)
C18	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP,UK,IT,EE,E,EA)
C19	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V (US,CND)
C19	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP,UK,IT,EE,E,EA)
C22	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C23	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C24	1-164-234-11	CERAMIC CHIP	1uF		10V
C25	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C101	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C103	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C104	1-126-157-11	ELECT	10uF	20%	16V
C105	1-164-234-11	CERAMIC CHIP	1uF		10V
C106	1-164-009-11	CERAMIC CHIP	0.001uF	10%	50V
C107	1-164-234-11	CERAMIC CHIP	1uF		10V
C108	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C203	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C204	1-126-157-11	ELECT	10uF	20%	16V
C205	1-164-234-11	CERAMIC CHIP	1uF		10V
C206	1-164-009-11	CERAMIC CHIP	0.001uF	10%	50V
C207	1-164-234-11	CERAMIC CHIP	1uF		10V
C208	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C302	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C303	1-126-153-11	ELECT	22uF	20%	6.3V
C304	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C305	1-126-153-11	ELECT	22uF	20%	6.3V
C306	1-164-234-11	CERAMIC CHIP	1uF		10V
C308	1-126-162-11	ELECT	3.3uF	20%	50V
C309	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V

Ref. No.	Part No.	Description			Remark
C310	1-164-234-11	CERAMIC CHIP	1uF		10V
C311	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C312	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C313	1-164-234-11	CERAMIC CHIP	1uF		10V
C314	1-164-234-11	CERAMIC CHIP	1uF		10V
C315	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C316	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C318	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C319	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C321	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C322	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C328	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C329	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C601	1-124-434-00	ELECT	220uF	20%	4V
C602	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C603	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C604	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< FILTER >			
CF1	1-577-072-11	FILTER, CERAMIC			
CF2	1-567-097-61	FILTER, CERAMIC			
		< CONNECTOR >			
CN301	1-569-252-21	HOUSING, CONNECTOR (FPC) 5P			
* CN302	1-750-092-11	HOUSING, CONNECTOR 3P			
		< COMPOSITION CIRCUIT BLOCK >			
CP1	1-236-711-21	FILTER, BAND PASS (AEP,UK,IT,E,EA)			
CP1	1-239-813-21	FILTER, BAND PASS (EE)			
		< TRIMMER >			
CT1-4, CV1-4	1-151-692-21	CAP, VAR (TUNING)(EE)			
CT1-4, CV1-4	1-151-629-31	CAP, VAR, POLYETHYLENE (TUNING) (US,CND,AEP,UK,IT,E,EA)			
		< IC >			
IC1	8-759-230-39	IC TA8122AF			
IC301	8-759-285-29	IC LA4582CM			
IC601	8-759-334-24	IC MM1038CFF			
		< JACK >			
J301	1-750-061-11	JACK,DC(POLARITY UNIFIED TYPE)(DC IN 3V)			
J302	1-565-287-11	JACK (Ω)			
		< JUMPER RESISTOR >			
JR1	1-216-295-91	CONDUCTOR, CHIP(2012)(US,CND)			
JR2	1-216-295-91	CONDUCTOR, CHIP(2012)(AEP,UK,IT,EE,E,EA)			
JR3	1-216-295-91	CONDUCTOR, CHIP(2012)(AEP,UK,IT,EE,E,EA)			

Ref. No.	Part No.	Description			Remark
JR4	1-216-295-91	CONDUCTOR, CHIP(2012)(IT,EA)			
JR5	1-216-295-91	CONDUCTOR, CHIP(2012)(US,CND)			
JR6	1-216-295-91	CONDUCTOR, CHIP(2012)			
JR7	1-216-295-91	CONDUCTOR, CHIP(2012)			
		< COIL >			
L2	1-426-578-11	COIL (WITH CORE) (RF) (EE)			
L2	1-460-120-11	COIL (WITH CORE) (US,CND,AEP,UK,E)			
L2	1-460-124-11	COIL (WITH CORE) (IT,EA)			
L3	1-403-697-11	COIL (WITH CORE) (IT,EA)			
L3	1-409-655-11	COIL (WITH CORE) (EE)			
L3	1-411-859-11	COIL (WITH CORE) (OSC)(US,CND,AEP,UK,E)			
L4	1-406-408-11	COIL (OSC) (US,CND,AEP,UK,E)			
L4	1-406-409-11	COIL (OSC) (IT,EE,EA)			
L101	1-500-245-11	BEAD,FERRITE			
L201	1-500-245-11	BEAD,FERAITE			
L301	1-412-006-31	INDUCTOR CHIP 10uH			
		< TRANSISTOR >			
Q2	8-729-102-77	TRANSISTOR 2SA812-T2M7			
Q101	8-729-207-65	TRANSISTOR RN1410			
Q201	8-729-207-65	TRANSISTOR RN1410			
Q301	8-729-230-49	TRANSISTOR 2SC2712-YG			
		< RESISTOR >			
R1	1-216-009-00	METAL CHIP	22	5%	1/10W
R2	1-216-081-00	METAL CHIP	22K	5%	1/10W
R3	1-216-077-00	METAL CHIP	15K	5%	1/10W
R4	1-216-077-00	METAL CHIP	15K	5%	1/10W
R5	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R6	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R7	1-216-037-00	METAL CHIP	330	5%	1/10W
R8	1-216-001-00	METAL CHIP	10	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-077-00	METAL CHIP	15K	5%	1/10W
R105	1-216-117-00	METAL CHIP	680K	5%	1/10W
R106	1-216-043-91	METAL GLAZE	560	5%	1/10W
R107	1-216-295-91	CONDUCTOR, CHIP (2012) (US,CND,AEP,UK,IT,EE)			
R107	1-216-313-00	METAL CHIP	8.2	5%	1/10W (E,EA)
R109	1-216-095-00	METAL CHIP	82K	5%	1/10W (E,EA)
R109	1-216-107-00	METAL CHIP	270K	5%	1/10W (US,CND,AEP,UK,IT,EE)
R203	1-216-077-00	METAL CHIP	15K	5%	1/10W
R204	1-216-077-00	METAL CHIP	15K	5%	1/10W
R205	1-216-117-00	METAL CHIP	680K	5%	1/10W
R206	1-216-043-91	METAL GLAZE	560	5%	1/10W
R207	1-216-295-91	CONDUCTOR, CHIP (2012)(US,CND,AEP,UK,IT,EE)			

REVISED

MAIN

Ref. No.	Part No.	Description			Remark
R207	1-216-313-00	METAL CHIP	8.2	5%	1/10W (E,EA)
R209	1-216-095-00	METAL CHIP	82K	5%	1/10W (E,EA)
R209	1-216-107-00	METAL CHIP	270K	5%	1/10W (US,CND,AEP,UK,IT,EE)
R305	1-216-081-00	METAL CHIP	22K	5%	1/10W
R306	1-216-077-00	METAL CHIP	15K	5%	1/10W
R308	1-216-077-00	METAL CHIP	15K	5%	1/10W
R309	1-216-113-00	METAL CHIP	470K	5%	1/10W
R320	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R601	1-217-905-11	METAL GLAZE	1.5	5%	1/10W
R602	1-217-905-11	METAL GLAZE	1.5	5%	1/10W
R603	1-216-043-91	METAL GLAZE	560	5%	1/10W
		< VARIABLE RESISTOR >			
RV301	1-223-609-21	RES, VAR, CARBON 10K/10K (VOLUME)			
RV601	1-225-252-21	RES, ADJ, CARBON 470			
		< SWITCH >			
S302	1-571-986-11	SWITCH, LEAF (TAPE POWER SW)			
S303	1-692-298-11	SWITCH, SLIDE (NORM,CrO2/METAL)			
S304	1-692-299-11	SWITCH, SLIDE (TAPE(RADIO OFF),AM,FM)			
S305	1-692-898-11	SWITCH, SLIDE (AVLS)			
		< TRANSFORMER >			
T1	1-404-949-11	TRANSFORMER, IF			
		< THERMISTOR >			
TH601	1-809-279-11	THERMISTOR, POSITIVE			
TH602	1-810-764-11	THERMISTOR, POSITIVE			
		< VIBRATOR >			
X1	1-577-091-21	OSCILLATOR, CERAMIC (19KHz)			
X2	1-567-097-61	FILTER, CERAMIC (10.7MHz)			

****

MISCELLANEOUS
****

14	1-467-600-21	MEGA BASS UNIT (SW)
HP901	1-500-115-11	HEAD, MAGNETIC (PLAYBACK)
L1	X-3371-847-1	FERRITE BAR ANTENNA SUB ASSY
M901	1-698-353-11	MOTOR, DC (REEL/CAPSTAN)

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
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	1-504-228-11	HEADPHONE (MDR-013)(US,CND,AEP,UK,IT,EE)	
	3-810-696-11	MANUAL, INSTRUCTION (ENGLISH)(US,CND)	
	3-810-696-21	MANUAL, INSTRUCTION (FRENCH)(CND)	
	3-810-696-31	MANUAL, INSTRUCTION (Printed in CHINA) (ENGLISH,FRENCH,GERMAN,SPANISH,DUTCH, SWEDISH,ITALIAN,PORTUGUESE)(AEP,UK,IT)	
	3-810-696-41	MANUAL, INSTRUCTION (ENGLISH,FRENCH,GERMAN,SPANISH,DUTCH, SWEDISH,ITALIAN,PORTUGUESE)(AEP,UK)	
	3-810-696-51	MANUAL, INSTRUCTION (Printed in CHINA) (ENGLISH,SPANISH,CHINESE,KOREAN)(E,EA)	
	3-810-696-61	MANUAL, INSTRUCTION (ENGLISH,SPANISH,CHINESE,KOREAN)(E)	
	3-810-696-71	MANUAL, INSTRUCTION (ENGLISH,POLISH,HUNGARIAN,RUSSIAN)(EE)	
*	3-910-200-01	CUSHION (AEP,UK,IT,EE)	
*	3-910-312-01	CUSHION (E,EA)	
*	3-932-290-01	INDIVIDUAL CARTON (AEP,UK,IT,EE)	
*	3-932-291-01	INDIVIDUAL CARTON (E,EA)	
	8-953-130-90	HEADPHONE MDR-E801//K SET (E,EA)	
	X-3372-109-1	CLIP, BELT ASSY	

9-960-557-11
(Including 9-960-557-91)

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